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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,573	09/30/2003	Liam D. Comerford	YOR920030388US1 (163-12)	3846
24336	7590	07/06/2007	EXAMINER	
KEUSEY, TUTUNJIAN & BITETTO, P.C. 20 CROSSWAYS PARK NORTH SUITE 210 WOODBURY, NY 11797			LENNOX, NATALIE	
		ART UNIT	PAPER NUMBER	
		2626		
		MAIL DATE	DELIVERY MODE	
		07/06/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/674,573	COMERFORD, LIAM D.
	Examiner	Art Unit
	Natalie Lennox	2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 30 September 2003.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-36 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on September 30, 2003 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____.	6) <input type="checkbox"/> Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 21, 22, and 25 are objected to because of the following informalities: Claims 21, 22, and 25 recite the limitation "word boundaries" in the second line. These claims are dependent from claim 16, which claims "acoustic word boundaries." Applicant should be consistent with the terminology throughout the claims. For examination purposes, examiner interprets "word boundaries" as being "acoustic word boundaries." Appropriate correction is required.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.
2. Claims 16 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claim 25 recites the limitation "the step of associating time segments" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3, 5, 7, 15-16, and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Steinbiss (US 2005/0071169).

As per claims 1 and 15, Steinbiss teaches a method and program storage device readable by machine, for extracting commands and acoustic data in a same utterance, comprising the steps of:

decoding at least one word in acoustic data representing an acoustic signal that comprises a human utterance and determining acoustic word boundaries within the acoustic data (Fig. 1 illustrates voice command S with word sequence “TV on,” wherein signal section t1 represents the word “TV” and signal section tr represents the word “on.”);

extracting at least one command in a decoded utterance (Fig. 1, signal section tr representing the command “on”); and

identifying acoustic data segments in the utterance based on the acoustic word boundaries (Fig. 1, acoustic data segments t1 and tr).

As per claim 3, Steinbiss teaches the method as recited in claim 1, further comprising the step of executing the at least one command from the decoded utterance (Paragraph [0039], "The command sequence "TV on" is then passed to a control device, which switches on the television set.").

As per claim 5, Steinbiss teaches the method as recited in claim 3, further comprising the step of submitting at least one non-command voice data segment for recognition using the recognizer vocabulary (Paragraph [0001], "a voice signal of a user is fed to a voice recognition device for recognizing a command or a command sequence." For the example on Fig. 1 the voice signal was "TV on" which comprises the non-command voice segment "TV." Also it is inherent that in order for the recognition device to recognize a command it has to make use of at least one vocabulary.).

As per claim 7, Steinbiss teaches the method as recited in claim 1, further comprising the step of submitting the acoustic data segments for recognition when computing resources are available (Paragraph [0039], "As soon as the voice signal S is detected, it is passed to a voice recognition device, which analyses the voice signal further in order to recognize the command communicated therein or the command sequence." The fact that the system (voice recognition device) is ready for processing the voice signal it is inherent that "computing resources" are available).

As per claims 16 and 31, Steinbiss teaches a method and a program storage device readable by machine, for recognizing at least one command and

at least one segment of acoustic voice data in a same utterance comprising the steps of:

decoding at last one word in voice data representing the acoustic signal that comprises a human utterance and determining the acoustic word boundaries within the voice data (Fig. 1 illustrates voice command S with word sequence "TV on," wherein signal section t1 represents the word "TV" and signal section tr represents the word "on.");

extracting at least one command from the utterance (Fig. 1, signal section tr representing the command "on");

associating segments in the voice data based on the acoustic word boundaries with labels (Fig. 1, acoustic data segments t1 and tr, wherein t1 and tr are labels representing the acoustic data segments "TV" and "on," respectively.).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 4, 6, 14, 18-20, 23, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steinbiss (US 2005/0071169) in view of Stammler et al. (US Patent 6,839,670).

As per claims 2 and 30, Steinbiss teaches the method according to claims 1 and 16, but does not specifically mention the step of determining acoustic word boundaries including finding segment boundaries by iteratively comparing the same utterance to a plurality of vocabularies. However, Stammler teaches the step of determining acoustic word boundaries including finding segment boundaries by iteratively comparing the same utterance to a plurality of vocabularies (Col. 5, lines 38-41, Col. 2, lines 47-49, Col. 4, lines 60-63, Col. 5, lines 11-13, and Col. 2, lines 61-65, wherein the step of determining acoustic word boundaries includes finding segment boundaries in the speaker independent and speaker dependent vocabularies. The speaker independent recognizer recognizes general control commands, numbers, names, letters, etc., without requiring that the speaker or user train one or several of the words ahead of time (Col. 4, lines 60-63) and the speaker dependent recognizer recognizes user-specific/speaker-specific names or functions, which the user/speaker defines and trains (Col. 5, lines 11-13). The system permits a speech command input or speech dialog control that is for the most part adapted to the natural way of speaking, and an extensive vocabulary of admissible commands that is made available to the speaker for this (Col. 2, lines 61-65). In a specific example (Col. 5, lines 38-41), "call uncle Willi," the speaker independent recognizer recognizes "call" and the speaker dependent recognizer, "uncle Willi.")

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of finding segment boundaries by iteratively comparing the same utterance to a plurality of

vocabularies as taught by Stammler et al for Steinbiss' method because Stammler et al. provides a system that permits a speech command input or speech dialog control that is for the most part adapted to the natural way of speaking, and an extensive vocabulary of admissible commands that is made available to the speaker for this (Col. 2, lines 60-65).

As per claim 4, Steinbiss teaches the method as recited in claim 3, but does not specifically mention the method further comprising at least one of storing the acoustic data segments and using the acoustic data segments in executing the at least one command. However, Stammler et al. teach at least one of storing the acoustic data segments and using the acoustic data segments in executing the at least one command (Col. 5, lines 36-41, Col. 4, lines 55-57, and Col. 5, lines 11-18) The step of storing the acoustic data segments is done by the speaker-dependent recognizer, which "the user/speaker defines and trains" with "user-specific/speaker-specific names or functions" (the names or functions are the acoustic data segments added to the speaker dependent vocabulary) (Col. 5, lines 11-18). The step of using the acoustic data segments in executing the at least one command is demonstrated as an example when the user utters the command "call uncle Willi." The speaker-independent vocabulary recognizes the command "call" and the speaker-dependent vocabulary the acoustic data segment "uncle Willi" (Col. 5, lines 36-41). Clearly the command "call" needs the acoustic data segment "uncle Willi" in order to execute the complete command.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of storing data segments and using the data segments in executing the at least one command as taught by Stammler et al. for Steinbiss' method because Stammler et al. provides the speaker dependent recognizer so that the user/speaker has the option of setting up or editing personal vocabulary and adapting this vocabulary at any time to accommodate his/her needs (Col. 5, lines 13-18).

As per claim 6, Steinbiss teaches the method according to claim 1, but does not specifically mention the method further comprising the step of changing a recognizer vocabulary. However, Stammler et al. teach the step of changing a recognizer vocabulary (Col. 5, lines 37-41). In a specific example, in order to recognize the complete command "call uncle Willi," the word "call" would be recognized by the speaker-independent vocabulary and "uncle Willi" would be recognized by the speaker-dependent vocabulary.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of changing a recognizer vocabulary as taught by Stammler et al. for Steinbiss' method because Stammler et al.'s speaker dependent vocabulary has the option for a user setting up or editing a personal vocabulary with data that fits his/her needs (Col. 5, lines 13-18) and the speaker independent vocabulary only contains general control commands, numbers, names, letters, etc., already trained and without being able to be modified by the user (Col. 4, lines 60-63, and Col. 5, lines 8-10).

As per claim 14, Steinbiss teaches the method according to claim 1, but does not specifically mention the method further comprising the step of executing the at least command in the utterance using undecoded acoustic data from within the same utterance. However Stammler et al. teach the step of executing the at least command in the utterance using undecoded acoustic data from within the same utterance (Col. 4, lines 60-62 and Col. 9, lines 19-29). Speaker independent recognizer is capable of recognizing general control commands, numbers, names, letters, etc. (Col. 4, lines 60-62) from an utterance even when the utterance contains garbage words ("non-words") or unnecessary information. (Col. 9, lines 19-29, for example command: "circle with radius one" from utterance: "I now would like to have a circle with radius one," wherein "I now would like to have a..." is interpreted as undecoded acoustic data.)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of executing the at least command in the utterance using undecoded acoustic data as taught by Stammler et al. for Steinbiss' method because Stammler et al. provides a classification unit for the speaker independent recognizer (Fig. 2) that is able to recognize and separate filler phonemes or garbage words. Garbage words are language complements, which are added by the speaker - unnecessarily – to the actual speech commands, but which are not part of the vocabularies of the speech recognizer (Col. 9, lines 18-25).

As per claim 18, Steinbiss teaches the method according to claim 16, but does not specifically mention the method further comprising the step of executing

the at least command in the utterance using undecoded information in the acoustic voice data. However Stammler et al. teach the step of executing the at least command in the utterance using undecoded information in the acoustic voice data (Col. 4, lines 60-62 and Col. 9, lines 19-29). Speaker independent recognizer is capable of recognizing general control commands, numbers, names, letters, etc. (Col. 4, lines 60-62) from an utterance even when the utterance contains garbage words ("non-words") or unnecessary information. (Col. 9, lines 19-29, for example command: "circle with radius one" from utterance: "I now would like to have a circle with radius one," wherein "I now would like to have a..." is interpreted as undecoded information.)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of executing the at least command in the utterance using undecoded acoustic data as taught by Stammler et al. for Steinbiss' method because Stammler et al. provides a classification unit for the speaker independent recognizer (Fig. 2) that is able to recognize and separate filler phonemes or garbage words. Garbage words are language complements, which are added by the speaker - unnecessarily – to the actual speech commands, but which are not part of the vocabularies of the speech recognizer (Col. 9, lines 18-25).

As per claim 19, Steinbiss teaches the method according to claim 16, but he does not specifically mention the step of extracting including the step of storing at least one non-command voice data segment. However, Stammler et al. teach mention the step of extracting including the step of storing at least one

non-command voice data segment (Col. 5, lines 11-15 and Col. 5, lines 36-41).

The speaker-dependent recognizer is capable of storing "user-specific/speaker-specific names or functions, which the user/speaker defines and trains. The user/speaker has the option of setting up or editing a personal vocabulary in the form of name lists, function lists, etc." (Col. 5, lines 11-15). In a specific example "call uncle Willi," "uncle Willi" is the non-command voice data segment, which is part of the speaker-dependent vocabulary (Col. 5, lines 36-41).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of storing data segments and using the data segments in executing the at least one command as taught by Stammler et al. for Steinbiss' method because Stammler et al. provides the speaker dependent recognizer so that the user/speaker has the option of setting up or editing personal vocabulary in the form of name lists, function lists, etc., and adapt this vocabulary at any time to his/her needs (Col. 5, lines 13-18). This name lists and function lists (data) are necessary for executing complete commands.

As per claim 20, Steinbiss teaches the method according to claim 16, but he does not specifically mention the step of extracting including calling a vocabulary for recognizing numbers and recognizing the numbers in the utterance. However, Stammler et al. teach the step of extracting including calling a vocabulary for recognizing numbers and recognizing the numbers in the utterance (Col. 4, lines 59-63).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of calling a vocabulary for recognition of numbers and recognizing the numbers in the utterance as taught by Stammler et al. for Steinbiss' method because commands requiring storing telephone numbers or changing channels require the recognizer to be able to recognize the numbers.

As per claim 23, Steinbiss teaches the method according to claim 16, but he does not specifically mention the step of associating including the step of changing a recognizer vocabulary and submitting at least one non-command voice data segment for recognition. However, Stammler et al. teach the step of associating including the step of changing a recognizer vocabulary and submitting at least one non-command voice data segment for recognition (Col. 5, lines 33-41). The speaker dependent recognizer is connected without interface to a speaker independent recognizer. In a specific example, "call uncle Willi," the word "call" is part of the speaker independent vocabulary and "uncle Willi" is part of the speaker dependent vocabulary (Col. 5, lines 33-41), wherein "uncle Willi" is the non-command voice data segment.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of changing a recognizer vocabulary and submitting at least one non-command voice data segment for recognition as taught by Stammler et al. for Steinbiss' method because Stammler et al. provides a speech recognition unit consisting an independent compound-word recognizer and a speaker dependent additional speech recognizer (Col. 2,

lines 47-49), wherein the independent recognizer recognizes general control command, numbers, names, letters, etc, and the speaker dependent recognizer recognizes user-specific/speaker-specific names or functions (non-command), which the user/speaker defines and trains (Col. 5, lines 11-13).

5. Claims 8-13, 17, and 24-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steinbiss (US 2005/0071169) in view of Walker et al. (US Patent 6,434,529).

As per claim 8, Steinbiss teaches the method according to claim 1, but does not specifically mention the step of extracting at least one command from the utterance includes employing one or more grammars to distinguish the command. However, Walker et al. teaches the step of extracting at least one command from the utterance includes employing one or more grammars to distinguish the command (Fig. 1 and Col. 5, lines 49-60). Speech recognizer 10 with grammars 12, which receives a spoken command from a user and matches the user's utterance with one or more rules in one of the grammars 12. A recognition result containing tokens (words) the user said, along with other information such as the grammar and rule name that matched the utterance, is also generated and passed to the result listener 18 (Col. 5, lines 49-60).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of employing one or more grammars to distinguish a command as taught by Walker et al. for Steinbiss' method because Walker et al. provides a system and method for referencing

object instances of an application program, and invoking methods on those object instances from within a recognition grammar (Col. 3, lines 58-60).

As per claim 25, Steinbiss teaches the method according to claim 16, but does not specifically mention the step of associating time segments of the word boundaries of the commands with a label including employing grammars to associate a unique label with each command segment in the utterance. However, Walker et al. teaches the step of associating time segments of the word boundaries of the commands with a label including employing grammars to associate a unique label with each command segment in the utterance (Col. 6, lines 36-44). The association of the label <order> to the command segment "I want a (hamburger|burger) with <toppings>" from the user utterance "I want a (hamburger|burger) with onions and mustard." The labels <veggy> and <condiment> are also associated with the words onion and mustard, respectively.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of employing one or more grammars to distinguish a command as taught by Walker et al. for Steinbiss' method because Walker et al. provides a system and method for referencing object instances of an application program, and invoking methods on those object instances from within a recognition grammar (Col. 3, lines 58-60).

As per claims 9 and 27, Steinbiss in view of Walker et al. teach the method according to claim 8 and 25, wherein the grammars include a from for extracting information for an order or verbal contract (Walker et al. teach a

system (Fig. 1) that includes result listener 18, parse tree 20, and a tags parser 24. The result listener receives the recognition result and uses the grammar from grammars 12, which includes the rule that was matched to turn the result into a parse tree 20 (Col. 5, lines 61-63), then the tags parser 24 evaluates the parse tree 20 and creates an object instance, called a rule object, for each rule it encounters in the parse tree 20. The name of a rule object for any given rule is, for purposes of example, of the form \$name. That is, the name of the rule object is formed by prepending a '\$' to the name of the rule (Col. 6, lines 14-19). In a specific example, Col. 6, lines 36-44 describe an example of a form (or rule) for a food order).

As per claims 10 and 28, Steinbiss in view of Walker et al. teach the method according to claims 8 and 25, wherein the grammars include a from for reminding a user to perform a task (Walker et al. teach a system (Fig. 1) that includes result listener 18, parse tree 20, and a tags parser 24. The result listener receives the recognition result and uses the grammar from grammars 12, which includes the rule that was matched to turn the result into a parse tree 20 (Col. 5, lines 61-63), then the tags parser 24 evaluates the parse tree 20 and creates an object instance, called a rule object, for each rule it encounters in the parse tree 20. The name of a rule object for any given rule is, for purposes of example, of the form \$name. That is, the name of the rule object is formed by prepending a '\$' to the name of the rule (Col. 6, lines 14-19). In a specific example, Col. 6, lines 36-44, describe an example of a form (or rule) for a food

order. It would have been obvious to one having ordinary skill in the art that this form or rule could also be applied to remind a user to perform a task).

As per claims 11 and 29, Steinbiss in view of Walker et al. teach the method according to claims 8 and 25, wherein the grammars include a from for reminding a user to perform a task (Walker et al. teach a system (Fig. 1) that includes result listener 18, parse tree 20, and a tags parser 24. The result listener receives the recognition result and uses the grammar from grammars 12, which includes the rule that was matched to turn the result into a parse tree 20 (Col. 5, lines 61-63), then the tags parser 24 evaluates the parse tree 20 and creates an object instance, called a rule object, for each rule it encounters in the parse tree 20. The name of a rule object for any given rule is, for purposes of example, of the form \$name. That is, the name of the rule object is formed by prepending a '\$' to the name of the rule (Col. 6, lines 14-19). In a specific example, Col. 6, lines 36-44, describe an example of a form (or rule) for a food order. It would have been obvious to one having ordinary skill in the art that this form or rule could also be applied to extract maximum meaningful length segments under interruption or silence conditions).

As per claim 12, Steinbiss in view of Walker et al. teach the method according to claim 8, wherein the step of using grammars includes the step of associating at least one grammar label with the corresponding segment of acoustic data that has been decoded into a command (Walker's Col. 6, lines 36-44, give an example of a user's utterance "I want a burger with onions and mustard," wherein the label "<veggy>" is associated with the recognized acoustic

data “onions” and label “<order>” with “I want a (hamburger|burger) with <toppings>,” etc.).

As per claim 13, Steinbiss in view of Walker et al. teach the method according to claim 12, wherein the label includes a numerical value associated with each command. (Walker’s Col. 6, lines 36-44, give an example of a user’s utterance “I want a burger with onions and mustard,” wherein the label “<order>” is associated with the acoustic data segment “I want a (hamburger|burger) with <toppings>.” It would have been obvious to a person having ordinary skill in the art to include a numerical value to the label. For example, if there was a rule for another “order” such as “I want a <flavor> ice cream” the label could have included a number “<order2>”).

As per claim 17, Steinbiss teach the method according to claim 16, but he does not specifically mention the step of extracting including employing an application, which identifies commands in the utterance in accordance with the labels. However, Walker et al. teach the step of extracting including employing an application, which identifies commands in the utterance in accordance with the labels (Col. 4, lines 29-31 and Col. 4, lines 34-45). The application program may be referenced directly from scripting language within the tags (labels) defined by the rule grammar (Col. 4, lines 29-31). A portion of the rule grammar for the example of the media player is shown on Col. 4, lines 34-40, where commands such as “play,” “go,” and “start” are labeled <play>. Also the label <play> is part of the rule grammar for <command>. A tags parser program is invoked to interpret the tags in a recognition result matching one of the rules,

such as <command>. Processing of recognition results in the application programs may be simplified to an invocation of the tags parser (Col. 4, lines 41-45).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of employing one or more grammars to distinguish a command as taught by Walker et al. for Steinbiss' method because Walker et al. provides a system and method for referencing object instances of an application program, and invoking methods on those object instances from within a recognition grammar (Col. 3, lines 58-60).

As per claim 24, Steinbiss teach the method according to claim 16, but he does not specifically mention the method further comprising the step of buffering the utterance to be processed and maintaining the utterance in memory during processing of the utterance. However, Walker et al. teach the step of buffering the utterance to be processed and maintaining the utterance in memory during processing of the utterance (Fig. 8 and Col. 14, lines 57-58 and 62-64).

"SUSPENDED" state 136 of the Recognizer (Fig. 8), wherein the Recognizer remains in the SUSPENDED state 136 until processing of the result finalization event is completed (Col. 14, lines 57-58). In the SUSPENDED state 136 the Recognizer buffers incoming audio. This buffering allows a user to continue speaking without speech data being lost (Col. 14, lines 62-64).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of buffering the utterance to be processed and maintaining the utterance in memory during processing of

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the utterance as taught by Walker et al. for Steinbiss' method because Walker et al. provides the buffering of the audio (utterance) to give the user the perception of real-time processing (Col. 14, lines 65-67).

As per claim 26, Steinbiss in view of Walker et al. teach the method according to claim 25, wherein the label includes a numerical value Walker's Col. 6, lines 36-44, give an example of a user's utterance "I want a burger with onions and mustard," wherein the label "<order>" is associated with the acoustic data segment "I want a (hamburger|burger) with <toppings>." It would have been obvious to a person having ordinary skill in the art to include a numerical value to the label. For example, if there was a rule for another "order" such as "I want a <flavor> ice cream" the label could have included a number "<order2>").

6. Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steinbiss (US 2005/0071169) in view of Kanevsky et al. (US Patent 6,434,520).

As per claim 21, Steinbiss teaches the method according to claim 16, but he does not specifically mention the step of extracting including extracting acoustic data based on word boundaries and saving the acoustic data for acoustically rendering the acoustic data. However, Kanevsky et al. teach the step of extracting including extracting acoustic data based on word boundaries and saving the acoustic data for acoustically rendering the acoustic data (Fig. 1 and Col. 7, lines 22-30 and Col. 2, lines 1-4). An audio indexing system and method that includes a speech recognition/transcription module 109 (from Fig. 1), which stores the segmented audio data stream S₁-S_N 104 with the corresponding

speaker identity tags ID_1-ID_2 106, the environment/channel tags E_1-E_N 108, and the corresponding transcription T_1-T_N 110. Each segment may also be stored with its corresponding acoustic waveform, a subset of a few seconds of acoustic features, and/or a voiceprint, depending on the application and available memory (Col. 7, lines 22-30). Also the user may retrieve stored audio segments from the database by formulating queries based on one or more parameters corresponding to such indexed information (Col. 2, lines 1-4).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of extracting acoustic data based on word boundaries and saving the acoustic data for acoustically rendering as taught by Kanevsky et al. for Steinbiss' method because Kanevsky et al. provides an audio processing system and method for indexing and storing audio data, and an information retrieval system which provides immediate access to audio data stored in the archive through a description of the content of an audio recording, the identity of speakers in the audio recording, and /or a specification of circumstances surrounding the acquisition of the recordings (Col. 1, lines 32-38).

As per claim 22, Steinbiss teaches the method according to claim 16, but he does not specifically mention the step of extracting including extracting acoustic data based on word boundaries and decoding the acoustic data for storage. However, Kanevsky et al. teach the step of extracting including extracting acoustic data based on word boundaries and decoding the acoustic data for storage (Fig. 1, Col. 6, lines 39-42, and Col. 7, lines 22-30). An audio

indexing system and method that includes a speech recognition/transcription module 109 (from Fig. 1), which decodes the spoken utterances for each segment S₁-S_N 104 and generates a corresponding transcription T₁-T_N 110 (Col. 6, lines 39-42). The system also stores the segmented audio data stream S₁-S_N 104 with the corresponding speaker identity tags ID₁-ID₂ 106, the environment/channel tags E₁-E_N 108, and the corresponding transcription T₁-T_N 110. Each segment may also be stored with its corresponding acoustic waveform, a subset of a few seconds of acoustic features, and/or a voiceprint, depending on the application and available memory (Col. 7, lines 22-30).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of extracting acoustic data based on word boundaries and decoding the acoustic data for storage as taught by Kanevsky et al. for Steinbiss' method because Kanevsky et al. provides an audio processing system and method for indexing and storing audio data, and an information retrieval system which provides immediate access to audio data stored in the archive through a description of the content of an audio recording, the identity of speakers in the audio recording, and /or a specification of circumstances surrounding the acquisition of the recordings (Col. 1, lines 32-38).

7. Claims 32-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walker et al. (US Patent 6,434,529) in view of Romero (US 2002/0111803).

As per claim 32, Walker et al. teach a system for recognizing commands and voice data in a same utterance comprising:

an acoustic input, which receives utterances (Fig. 1, audio input 14);
a data buffer, which stores audio data representing the utterances (Col. 14, lines 62-67, "In the SUSPENDED state 136 (from Fig. 8) the Recognizer buffers incoming audio. This buffering allows a user to continue speaking without speech data being lost. Once the Recognizer returns to the LISTENING state the buffered audio is processed to give the user the perception of real-time processing."); and

at least one program that executes label-identified commands and processes remaining portions of the utterance in accordance with the commands (Processing of recognition results in the application program may be simplified to an invocation of the tags parser (tags parser program 24) such as "public void interpretResult(RecognitionResult recognitionResult) { TagsParser.parseResult(recognitionResult); }" (Col. 4, lines 43-49)); but Walker et al. do not specifically mention the system comprising:

a speech recognition engine, which matches portions of the utterances to acoustic models and language models to recognize words and word boundaries in the utterance and labels commands in the utterance. However, Romero teaches a speech recognition engine, which matches portions of the utterances to acoustic models and language models to recognize words and word boundaries in the utterance and labels commands in the utterance (Fig. 1, Paragraphs [0028] and [0020,0021,0022]). Speech recognizer 100 comprising an acoustic model 104 and a language model 116 (From Fig. 1). The recognizer also has a "fast acoustic match" 108, which makes use of the acoustic models

(from Fig. 1), for comparing a string of incoming labels to the items stored in the conceptual vocabulary (Paragraph [0028]). Also Romero's paragraphs [0020], [0021], and [0022] show examples of "tags" (or labeling) of an utterance, such as in paragraph [0020], for the utterance "Please, give me the phone number of Pedro Romero," the recognizer analyzes the fragment "Give me the phone number of" as a semantic identifier (command) and tagged "QUERY" or "QUERY-EN" and "Pedro Romero" as data and tagged "Pedro_fn Romero_In."

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of a speech recognizer as taught by Romero for Walker et al.'s system because Romero provides a speech recognizer that can accept Natural Language utterances as input and directly generate the information required to process a user request (Paragraph [0007]).

As per claim 33, Walker et al., as modified by Romero, teach the system as recited in claim 32, wherein the at least one program includes a function which searches the utterance for labels output from the speech recognition engine to execute a command associated with the label (Walker's Col. 4, lines 43-49, "Processing of recognition results in the application program may be simplified to an invocation of the tags parser (tags parser program 24) such as "public void interpretResult(RecognitionResult recognitionResult) {
TagsParser.parseResult(recognitionResult); }").

As per claim 34, Walker et al., as modified by Romero, teach the system as recited in claim 32, wherein, in accordance with each label, an audio segment is identified and processed (Walker's Col. 4, lines 43-49 describe an example of

the application program processing a recognition result, wherein the recognition result could be, Romero's example (Paragraph [0020]) of the tag "QUERY" representing the semantic identifier "Give me the phone number of" and the tag "Pedro_fn Romero_In" representing the data of the utterance "Please, give me the phone number of Pedro Romero."

As per claim 35, Walker et al., as modified by Romero, teach the system according to claim 32, wherein the speech recognition engine utilizes grammars with labels, which the system uses for assigning labels to decoded commands (Walker's Col. 4, lines 34-40, show an example of the rule grammar applied to a media-player application, wherein, for example, the system assigns the label <play> to the decoded commands (play|go|start)).

As per claim 36, Walker et al., as modified by Romero, teach the system according to claim 35, wherein the grammars are represented in Bachus-Naur Form (BNF) (Walker's Fig. 4).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sadhwani et al. (US 2002/0069048) provides a communication system that can be set to remind the user of a specific appointment.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Natalie Lennox whose telephone number is (571) 270-1649. The examiner can normally be reached on Monday to Friday 9:30 am - 7 pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571)272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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06/11/2007



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